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TRACKING DISTRIBUTED DATA RETRIEVAL IN A NETWORK DEVICE

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This application is a continuation-in-part of U.S. Serial Number 09/633,675, filed ~~September~~ ^{August 7, 2000} 18, 2000, entitled "Network Management System Including Custom Object Collections", still pending

S.J.
11/29/04

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Background

Periodically, management / historical data, including accounting, performance, security and fault logging data (or some portion thereof), may need to be retrieved from distributed modules (i.e., cards, printed circuit boards) within a network device (e.g., switch, router, hybrid switch-router), time stamped and stored in non-volatile memory within the network device. In addition, periodically, this data may need to be taken off the network device and moved to, for example, a workstation for processing and billing integration. The processing applications generally require the data to be in American Standard Code for Information Interchange (ASCII) format and billing / accounting applications generally require the data to be in Automatic Message Accounting / Billing format of the 0122 structure code defined by the Bellcore Automatic Message Accounting Format (AMA/BAF).

"Current" data may be gathered on relatively small time intervals, for example, every 15 minutes, and some finite amount of current data may be stored in non-volatile memory. Moreover, many applications require 24-hour summary data to be gathered at longer intervals, for example, every 6 or 12 hours, and some finite amount of summary data may also be stored in non-volatile memory. The gathering of 24-hour summary data increases data resiliency such that if any current data is lost or cannot be transferred out of the network device before being overwritten, the 24-hour summary data is still available.

In a distributed, large scale network device with potentially many thousands of interfaces simultaneously up and running, an exorbitant amount of bandwidth may be consumed by